Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (currently amended): A nucleic acid comprising a codon-optimized nucleotide sequence encoding a *Photorhabdus luminescens* ~~bacterial~~ LuxA protein.

Claim 2 (currently amended): The nucleic acid of claim 1, wherein the codon-optimized nucleotide sequence differs from a wild type nucleotide sequence that encodes the *Photorhabdus luminescens* ~~bacterial~~ LuxA protein by at least one codon substitution selected from the group consisting of: TTT to TTC; TTA, CTA, TTG, and CTT to CTG or CTC; ATT and ATA to ATC; GTT and GTA to GTG or GTC; TCT, TCA, and TCG to TCC; CCA and CCG to CCC or CCT; ACT, ACA and ACG to ACC; GCA and GCG to GCT or GCC; TAT to TAC; CAT to CAC; CAA to CAG; AAT to AAC; AAA to AAG; GAT to GAC; GAA to GAG; TGT to TGC; CGT and CGA to CGC, CGG, and AGA; AGT to AGC; and GGT and GGA to GGC or GGG.

Claim 3 (canceled).

Claim 4 (currently amended): [[The]] A nucleic acid ~~of claim 1, wherein the codon-optimized~~ comprising the nucleotide sequence [[is]] of SEQ ID NO.1.

Claim 5 (canceled).

Claim 6 (canceled).

Claim 7 (original): The nucleic acid of claim 1, further comprising a regulatory element operably linked to the codon-optimized nucleotide sequence.

Claim 8 (original): The nucleic acid of claim 7, wherein the regulatory element comprises an enhancer.

Claim 9 (currently amended): A cell comprising a nucleic acid comprising a codon-optimized nucleotide sequence encoding a *Photorhabdus luminescens* ~~bacterial~~ LuxA protein.

Claim 10 (original): The cell of claim 9; wherein the cell is a mammalian cell.

Claim 11 (original): The cell of claim 9, wherein the cell is immobilized on a substrate.

Claim 12 (currently amended): The cell of claim 9, wherein the codon-optimized nucleotide sequence differs from a wild type nucleotide sequence that encodes the *Photorhabdus luminescens* ~~bacterial~~ LuxA protein by at least one codon substitution selected from the group consisting of: TTT to TTC; TTA, CTA, TTG, and CTT to CTG or CTC; ATT and ATA to ATC; GTT and GTA to GTG or GTC; TCT, TCA, and TCG to TCC; CCA and CCG to CCC or CCT; ACT, ACA and ACG to ACC; GCA and GCG to GCT or GCC; TAT to TAC; CAT to CAC; CAA to CAG; AAT to AAC; AAA to AAG; GAT to GAC; GAA to GAG; TGT to TGC; CGT and CGA to CGC, CGG, and AGA; AGT to AGC; and GGT and GGA to GGC or GGG.

Claim 13 (canceled).

Claim 14 (currently amended): [[The]] A cell ~~of claim 12, wherein the codon-optimized~~ comprising the nucleotide sequence [[is]] of SEQ ID NO:1.

Claim 15 (withdrawn): The cell of claim 9, wherein the at least one component of a bacterial luciferase system comprises a LuxB polypeptide.

Claim 16 (withdrawn): The cell of claim 15, wherein the codon-optimized nucleotide sequence is SEQ ID NO:2.

Claim 17 (withdrawn): The cell of claim 9, wherein the codon-optimized nucleotide sequence is operably linked to a regulatory element.

Claim 18 (withdrawn): The cell of claim 17, wherein the regulatory element comprises an enhancer.

Claim 19 (withdrawn): A method comprising the step of introducing into a mammalian cell a nucleic acid comprising a codon-optimized nucleotide-sequence encoding at least one component of a bacterial luciferase system selected from the group consisting of a bacterial LuxA protein and a bacterial LuxB protein.

Claim 20 (withdrawn): The method of claim 19, wherein the codon-optimized nucleotide sequence differs from a wild type nucleotide sequence that encodes the at least one component of a bacterial luciferase system by at least one codon substitution selected from the group consisting of: TTT to TTC; TTA, CTA, TTG, and CTT to CTG or CTC; ATT and ATA to ATC; QTT and GTA to GTG or GTC; TCT, TCA, and TCG to TCC; CCA and CCG to CCC or CCT; ACT, ACA and ACG to ACC; GCA and GCG to GCT or GCC; TAT to TAC; CAT to CAC; CAA to CAG; AAT to AAC; AAA to AAG; GAT to GAC; GAA to GAG; TGT to TGC; CGT and CGA to CGC, CGG, and AGA; AGT to AGC; and GGT and GGA to GGC or GGG.

Claim 21 (withdrawn): The method of claim 19, wherein the at least one component of a bacterial luciferase system comprises a LuxA polypeptide.

Claim 22 (withdrawn): The method of claim 21, wherein the codon-optimized nucleotide sequence is SEQ ID NO:1.

Claim 23 (withdrawn): The method of claim 19, wherein the at least one component of a bacterial luciferase system comprises a LuxB polypeptide.

Claim 24 (withdrawn): The method of claim 23, wherein the codon-optimized nucleotide sequence is SEQ ID NO:2.

Claim 25 (withdrawn): The method of claim 19, wherein the codon-optimized nucleotide sequence is operably linked to a regulatory element.

Claim 26 (withdrawn): The method of claim 25, wherein the regulatory element comprises an enhancer.

Claim 27 (currently amended): A nucleic acid made by the steps of:

(a) providing a polynucleotide encoding a *Photorhabdus luminescens* ~~bacterial~~ LuxA protein; and

(b) making in the polynucleotide at least one codon substitution selected from the group consisting of: TTT to TTC; TTA, CTA, TTG, and CTT to CTG or CTC; ATT and ATA to ATC; GTT and GTA to GTG or GTC; TCT, TCA, and TCG to TCC; CCA and CCG to CCC or CCT; ACT, ACA and ACG to ACC; GCA and GCG to GCT or GCC; TAT to TAC; CAT to CAC; CAA to CAG; AAT to AAC; AAA to AAG; GAT to GAC; GAA to GAG; TGT to TGC; CGT and CGA to CGC, CGG, and AGA; AGT to AGC; and GGT and GGA to GGC or GGG,

wherein the resulting codon-substituted nucleic acid is expressed at higher levels when placed in a mammalian cell under expression-promoting conditions than is the polynucleotide of step (a) when placed in the mammalian cell under the expression-promoting conditions.

Claim 28 (canceled).

Claim 29 (withdrawn): The nucleic acid of claim 27, wherein the at least one luciferase component comprises a bacterial LuxB protein.

Claim 30 (canceled).

Claim 31 (previously presented): A kit for analyzing gene expression, the kit comprising:

(a) a vector comprising

(i) a nucleic acid of claim 1 or claim 27;

(ii) at least one restriction site;

(iii) at least one promoter;

(iv) at least one selection marker; and

(v) at least one initiation site; and

(b) instructions for use.

Claim 32 (previously presented): The kit of claim 31, wherein the vector further comprises an internal ribosome entry site (IRES).

Claim 33 (previously presented): The kit of claim 31, wherein the vector further comprises an enhancer.